

CLAIMS

What is claimed is:

A hardware system for performing MAC (Media Access Control) functions between a host CPU (Central Processing Unit) and a Network, the system comprising:

5 a bus interface that sends frames to the host CPU and receives frames from the host CPU;

a Tx state machine that sends frames to the network;

an Rx state machine that receives frames from the network;

a Tx buffer that receives frames from the bus interface and sends frames to the Tx state machine;

an Rx buffer that receives frames from the Rx state machine and sends frames to the buffer interface;

an encryption/decryption block that sends and receives frames between the Tx buffer and the Rx buffer;

a CRC (Cyclic Redundancy Code) block that receives frames from the Rx state machine and the Tx buffer and sends frames to the Tx state machine; and

a timer block that sends and receives frames from components of the system.

2. A method for processing frames in a MAC layer with hardware operations, comprising:

receiving an incoming frame from the network;

20 processing the incoming frame for FLPM (Frame Level Protocol Manager) time-critical functions;

from the act of processing the incoming frame for FLPM time-critical functions, sending an outgoing frame to the host;

from the act of processing the incoming frame for FLPM time-critical functions,
formulating FLPM time-critical responses;

from the act of processing the incoming frame for FLPM time-critical functions,
accumulating statistics;

5 from the act of processing the incoming frame for FLPM time-critical functions, updating
a MAC state;

from the act of formulating FLPM time-critical responses; formulating an outgoing
frame;

10 from the act of formulating an outgoing frame, transmitting the outgoing frame to the
network;

generating a special frame for the act of formulating an outgoing frame; and

receiving an incoming frame from the host CPU for the act of formulating an outgoing
frame;

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